

**Application Number 10/647,846**

**Filing Date: 08/26/2003**

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**Attorney Docket Number: Mankaruse 2003**

**Date: 01/20/2004**

**ABSTRACT**

**The High performance cooling systems for cooling a heat source is disclosed. The cooling systems are air cooling systems, liquid cooling system, or space radiation cooling system. The air cooling system includes at least one high performance cold plate or cold plate, at least one plenum, at least one liquid pump, and at least one liquid to air heat exchanger. The liquid cooling system includes at least one high performance cold plate or cold plate, at least one plenum, at least one liquid pump, and at least one liquid to liquid heat exchanger. The space radiation cooling system includes at least at least one high performance cold plate, or cold plate, at least one plenum, at least one liquid pump, and at least one space radiator. Several different coolant fluids are available and can be used as a primary system coolant depending on the application.**